American Polycarbonate Company

americanpolycarbonate.com

Multiwall Polycarbonate

Technical & Install Guide

V2.07/2026

American Polycarbonate Company

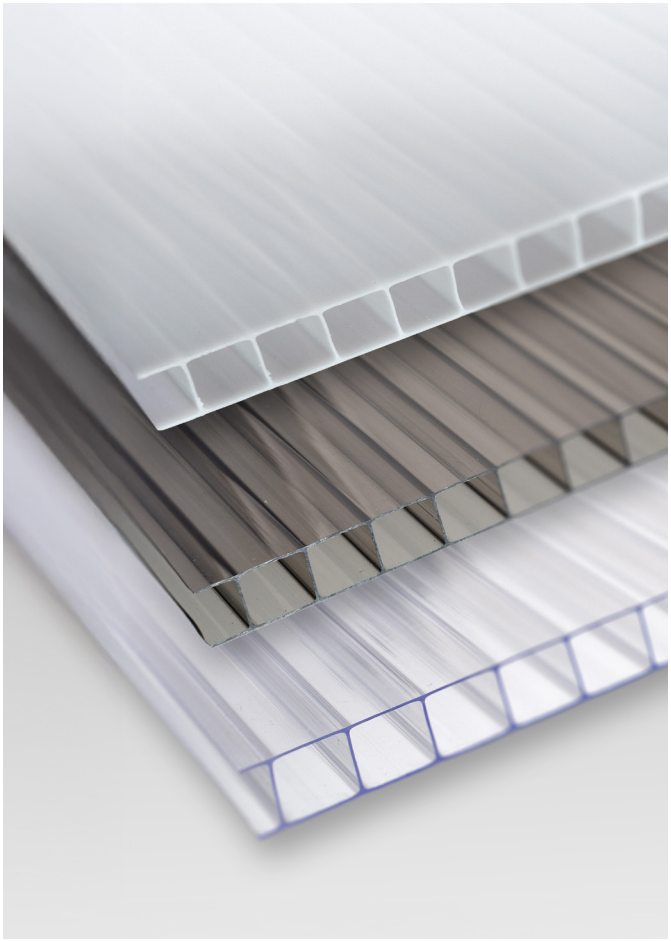
Contents

We are APC

At American Polycarbonate Company (APC), our mission is to deliver high-quality polycarbonate roofing and glazing materials, proudly extruded in the USA in De Pere, Wisconsin. By combining advanced manufacturing with market-leading service, we meet the unique needs of customers across North America and around the world.

Every functional detail in our dedicated extrusion and warehouse facility has been designed to maximize the efficiency of our service for polycarbonate multiwall and corrugated sheets.

It's great to know that when you trust an APC product, you're backed by US certified performance testing and our expert team in Wisconsin, always ready to help you achieve your project's goals.



What is Multiwall Polycarbonate?

Polycarbonate (PC) is a thermoplastic polymer that can be extruded into multiwall cellular sheets. These multiwall sheets are extremely strong and lightweight. Polycarbonate offers high light transmittance, making it an ideal alternative to conventional glass products.

Multiwall polycarbonate is easy to use, long lasting, and flexible in a variety of applications. The following technical overview provides basic information on the performance, handling, and installation of multiwall polycarbonate.

Polycarbonate combines a high level of mechanical, optical, and thermal properties in its structured sheet form:

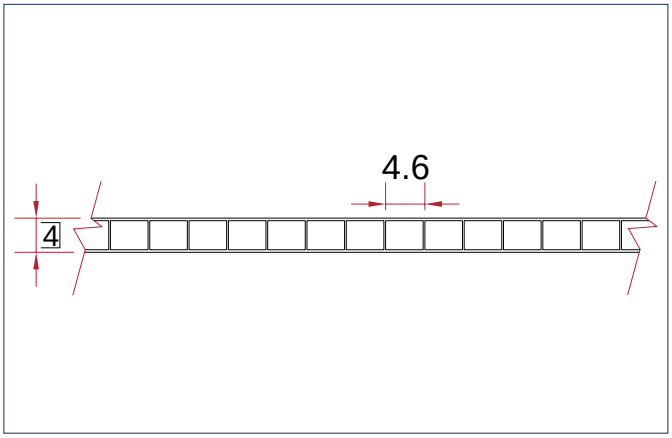
- **High Light Transmission**
- **UV-Protection**
- **Virtually Unbreakable**
- **Light in Weight**
- **Thermal Insulation**
- **Hail and Fire Resistance**
- **Easily Fabricated On-Site**
- **Long-Term Weather ability**

Multiwall polycarbonate is manufactured by an extrusion process. Plastic resin is melted and then extruded (pushed through) a die into a wide range of sheet widths, thicknesses, and structural strengths.

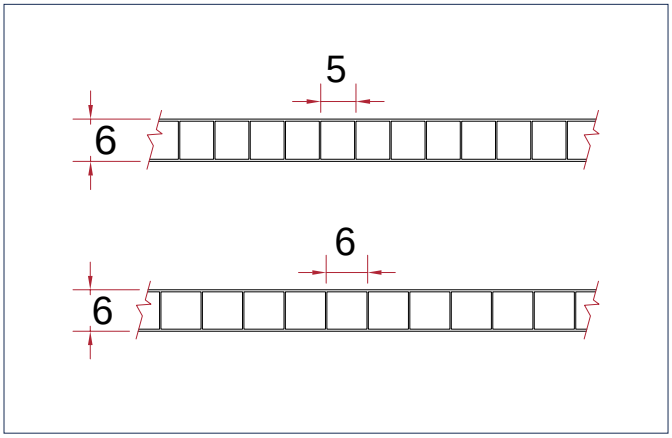
Multiwall polycarbonate is an ideal alternative to traditional glass for a wide range of applications, including greenhouses, pool enclosures, skylights, canopies, sunrooms, gazebos, pavilions, deck and patio covers, carports, walkways, wall partitions, and vertical glazing.

Product Range

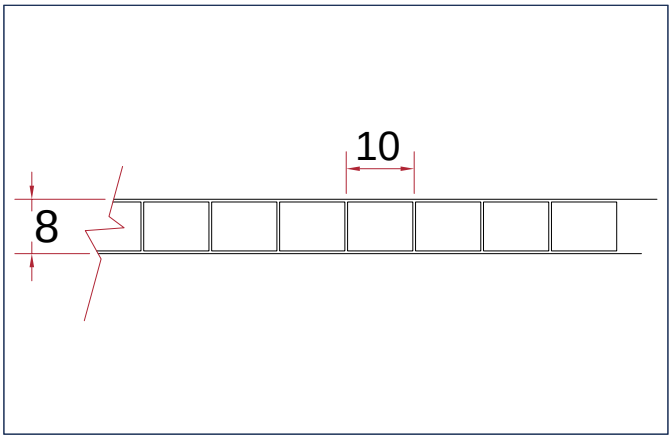
4mm Twinwall



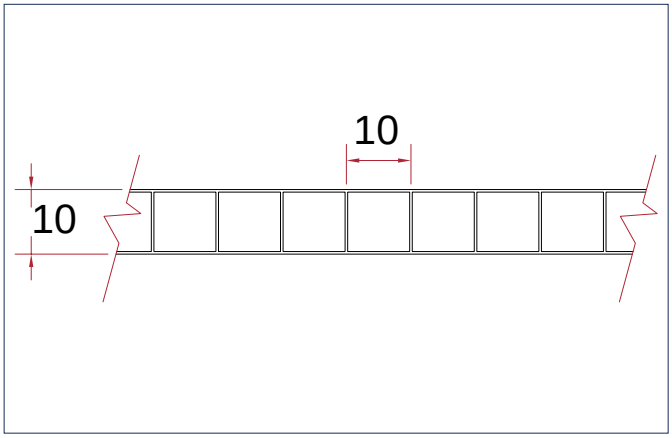
6mm Twinwall



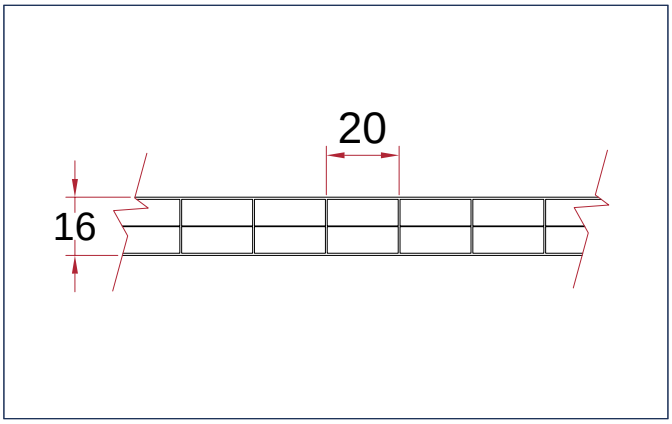
8mm Twinwall



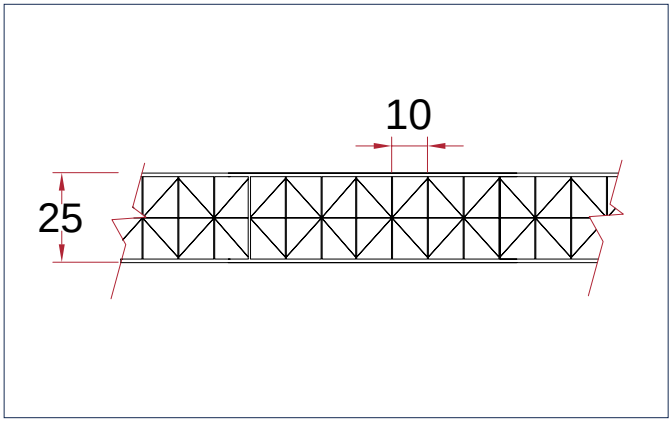
10mm Twinwall



16mm Triplewall



25mm Fivewall



Color Options

Multiwall Polycarbonate is available in a range of colors including clear, bronze, opal and diffused.

Clear is used where maximization of light is required. In order to take advantage of the heat build-up generated by the high level of light transmission clear is the ideal option for industrial and commercial greenhouses and garden centers.

Bronze and opal offer solar control by reducing the amount of light and minimizing glare.

Where diffusion of light is required diffused is the optimum choice. Diffused's clever technology dissipates daylight as it travels through the sheet creating a much softer, diffused light. High levels of light transmission are maintained but shadowing and glare are minimized.

Solar Heat Gain

Some control of heat gain within a building can be achieved using glazing materials which are designed to influence the nature and quantity of transmitted light. Multiwall polycarbonate with bronze and opal white tinting are both effective for solar control, reducing glare by diffusing incoming light and reducing heat gain.

UV Protection*

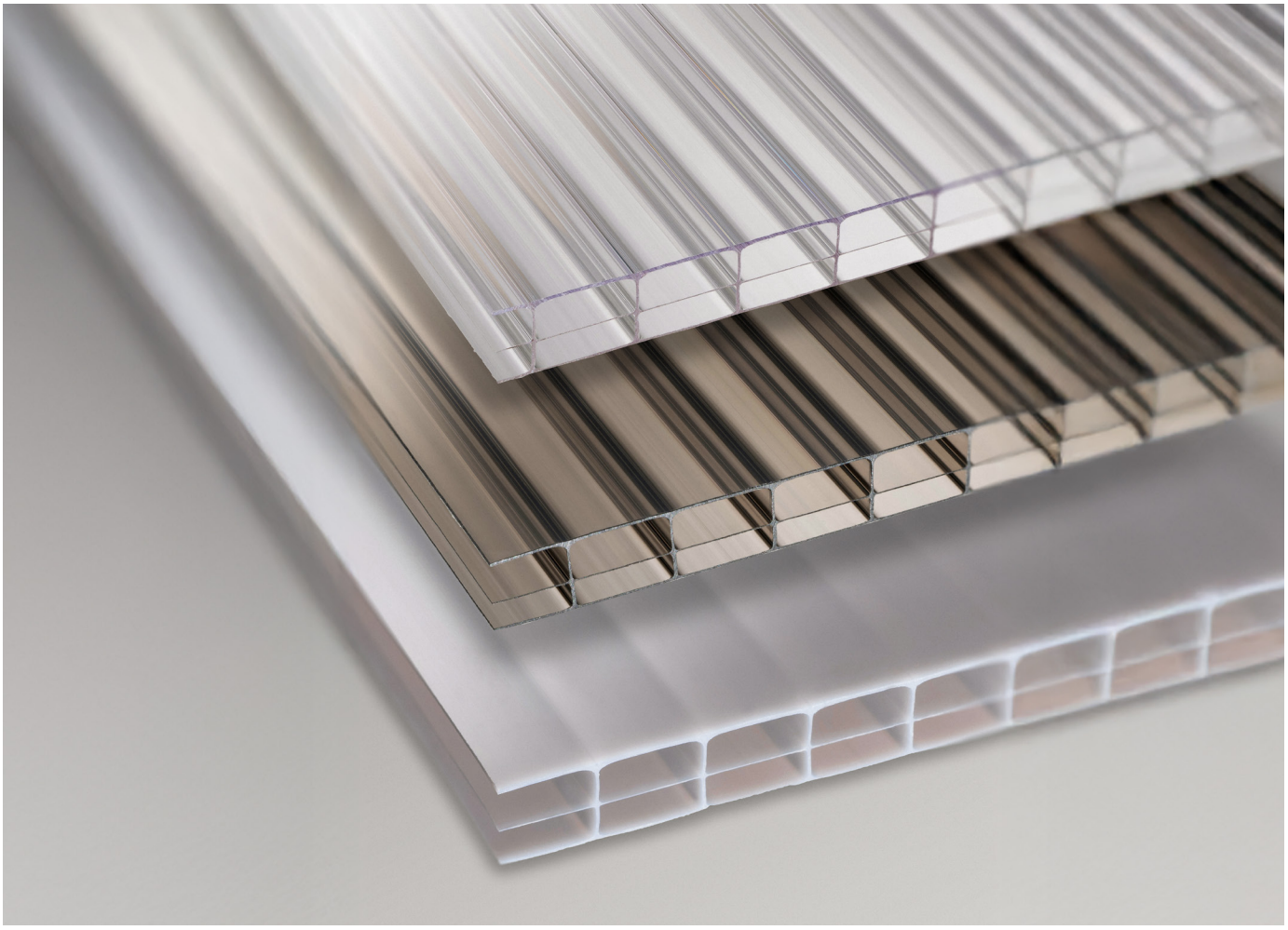
Ultra-violet protection is available on one or both sides of a multiwall polycarbonate sheet. Double sided UV protection provides protection in situations where the underside of the sheet may be exposed to the sun.

Anti Drip Coating*

Select multiwall polycarbonate sheets are available with an optional anti-drip coating applied to the reverse side of the sheet. This long lasting finish creates a glazing option that is resistant to condensation, ideal for use in commercial, agricultural and horticultural applications.

Subject to minimum order quantities, contact sales office for full details.

TINT OPTION	LIGHT TRANSMISSION (%) DIN 5036 BASED ON 16MM 3-WALL	BENEFIT	APPLICATIONS
Clear	74	Maximization of Daylight	Garden Centers & Greenhouses
Bronze (CY)	50	Solar control	Canopies & Walkways
Opal (VM)	40	Solar Control	Canopies & Privacy Screens
Diffused	72	Diffused light	Canopies & Sunrooms



Typical Properties

PHYSICAL PROPERTIES						LIGHT TRANSMISSION %			
THICKNESS	STRUCTURE	LBS/ SF	MIN BENDING RADIUS	U-VALUE	R-VALUE	CLEAR	OPAL (VM)	BRONZE (CY)	DIFFUSED (DC)
4mm	2-Wall	0.16	24"	0.69	1.45	85%	-	-	-
6mm	2-Wall	0.25	36"	0.65	1.54	82%	40%	50%	-
8mm	2-Wall	0.307	48"	0.60	1.67	81%	40%	50%	79%
10mm	2-Wall	0.348	60"	0.56	1.79	81%	40%	50%	-
16mm	3-Wall	0.55	95"	0.42	2.38	74%	40%	50%	72%
25mm	5-Wall	0.696	207"	0.28	3.57	68%	11%	30%	-

The typical properties table includes some non-standard items which may be subject to minimum order quantities and extended lead times.

Typical Properties of Polycarbonate

		STANDARD	VALUE	UNITS
Mechanical Properties	Tensile strength at yield	DIN 53455	>8702	psi
	Tensile strength at break	DIN 53455	>10152	psi
	Elongation at yield	DIN 53455	6 - 8	%
	Elongation at break	DIN 53455	>100	%
	Modulas of elasticity	DIN 53457	>333587	psi
	Notched impact strength	DIN 53453	>50	kJ/m^2
Physical Properties	Specific gravity	DIN 53479	0.0012	oz/ft^3
	Refractive index nD25	DIN 53491	1.585	
	Water absorption, 24h @ 23°C	DIN 53495	0.35	%
	Water permeability (thickness 1mm)	DIN 53122	<0.0023	oz/ft^3
Thermal Properties	Softening temperature Vicat 'B'	DIN 53460	293 - 302	°F
	Deflection temperature, load 1.8N/mm2	DIN 53461	284 - 293	°F
	Linear thermal expansion	DIN 53752	3.722	ft/ft°F
	Thermal conductivity (λ-value)	DIN 52612	0.116	Btu/(h·ft·°F)
	Maximum service temperature - no loading		212	°F
			266	°F

Sound Reduction Index

AMERILITE SHEET	SOUND REDUCTION INDEX* (dB)
4mm Twinwall	6
6mm Twinwall	8
8mm Twinwall	13
10mm Twinwall	20
16mm Triplewall[a]	21
25mm Fivewall	23

** Airborne Sound Reduction Index to BS EN ISO140-3: 1995, BS2750: Part 3*

[a] 16TRW with 20mm and 16mm rib spacing

(4mm Single Glazing – 27dB, 4+4mm Double Glazing – 25dB)

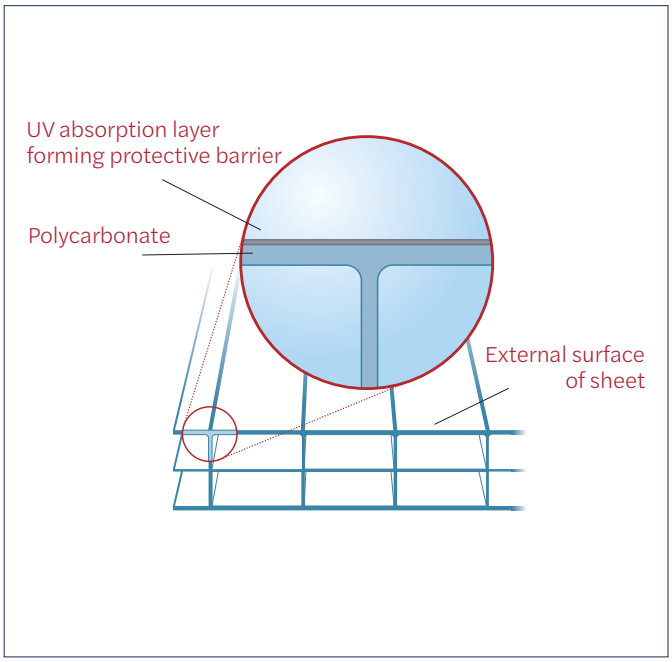
Measured on injection molded test specimens.

Resistance to UV Light

UV light has two potentially harmful effects on polycarbonate; a yellowing of the material itself and a degradation of mechanical properties, eg. resistance to impact. Multiwall polycarbonate's surface, which has a high performance co-extruded protection system, has a high degree of resistance to the effects of natural and artificial UV light sources minimizing long term yellowing and maintaining durability and toughness.

UV Light Absorption Layer

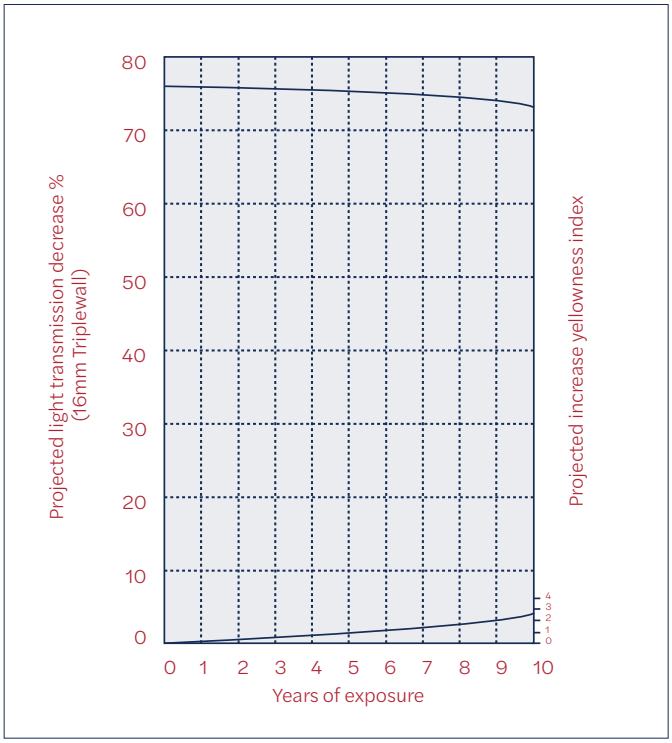
Multiwall polycarbonate has a high performance UV absorption layer co-extruded on the outer surface. This UV absorption layer forms a barrier to incident UV radiation, preventing it penetrating to the body of the sheet material, so that long term yellowing and loss of mechanical properties, eg. impact strength, are negligible.



Multiwall polycarbonate cuts out 98% of harmful UV radiation, protecting those working or playing beneath it.

Loss of light transmission, increase in yellowness index

Testing shows negligible degrading of the material's light transmission properties or yellowing and a retention of its inherent strength and resistance to impact.



This confirms multiwall polycarbonate as a most advanced insulating glazing material for exterior installations with numerous advantages over traditional glazing materials.

All multiwall polycarbonate has its UV resistant surface clearly indicated by the removable, branded, protective film and this should face outwards when installed.

Its intrinsic impact durability and optical clarity combined with its valuable energy conserving properties make multiwall polycarbonate a very popular material for use in roof glazing, rooflights,windows, doors, partitions and suspended ceilings.

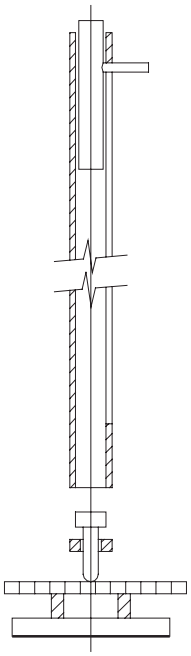
Resistance To Hail Damage

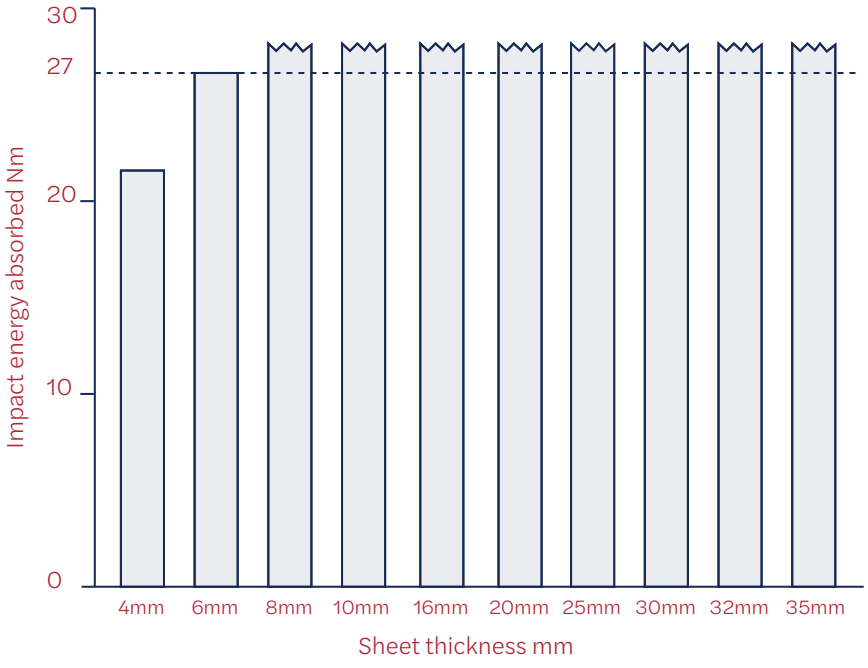
Damage to glazing materials, particularly those installed on roofs, occurs when hail storms contain hailstones above 15mm diameter and with impact velocities over 20m/s. Multiwall polycarbonate sheets provide good resistance to impact from material such as hail over a wide range of service temperatures and long service life.

For detailed warranty information regarding hail damage coverage for multiwall polycarbonate sheets, please contact our Technical Department.

Resistance To Impact

The resistance of multiwall polycarbonate to impact damage is assessed using the Gardiner Falling Dart Impact Test. Multiwall polycarbonate exhibits excellent resistance to impact damage over a broad service temperature range and prolonged service life. The fact that this resistance is superior to that of other glazing materials means superior resistance to breakage in handling, transport, installation and during its service life.





Comparative Weights

Multiwall polycarbonate has a very high strength to weight ratio. As the self weight is therefore very low, support structures do not need to be quite so heavy as in the case of, for example, glass. Consequently there are savings to be gained in terms of structure costs as well as installation and labor savings when multiwall polycarbonate is used.

THICKNESS (MM)	MULTIWALL POLYCARBONATE (LBS/SF)	SINGLE GLASS (LBS/SF)	DOUBLE GLASS (LBS/SF)
4TW	0.16	2.05	4.10
6TW	0.27	3.07	6.14
8TW	0.31	4.10	8.19
10TW	0.35	5.12	10.24
16 TRW	0.55	8.19	16.39
25 FVW	0.70	12.80	25.60

Service Temperature

Multiwall polycarbonate can be installed in a variety of applications, with varying temperatures. However, the material's mechanical performance is known to remain stable in prolonged service in temperatures ranging from -40˚F to 212˚F.

Thermal Expansion

The coefficient of linear expansion of polycarbonate material is 3.722 ft/ft˚F. This is high relative to that of most other materials in conjunction with which it is normally used.

As a consequence careful allowance must be made for the thermal expansion of multiwall polycarbonate sheets, both longitudinally and laterally.

Insulation

A considerable advantage of multiwall polycarbonate, particularly in colder regions is that it is much more efficient at preventing excessive heat loss than traditional glazing materials of comparable thickness.

With the emphasis firmly on energy conservation in modern building practice, multiwall polycarbonate insulating glazing can be a great asset to the architect and specifier, particularly in colder regions. The Relative U-values table compares the insulation properties of multiwall polycarbonate with other glazing types.

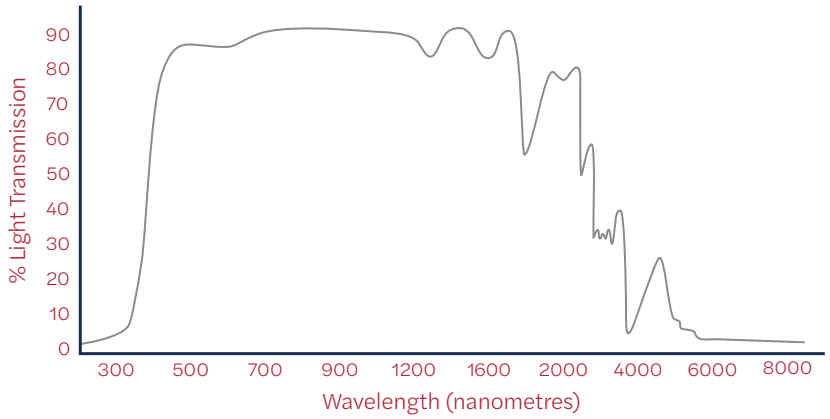
THICKNESS (MM)	MULTIWALL POLYCARBONATE (LBS/SF)	SINGLE GLASS (LBS/SF)	DOUBLE GLASS (LBS/SF)	TWINWALL ACRYLIC (LBS/SF)
4TW	0.69	1.04	0.47	0.28
6TW	0.65	1.02	0.47	0.28
8TW	0.60	1.00	0.47	0.28
10TW	0.56	1.00	0.47	0.28
16 TRW	0.42	0.97	0.47	0.28
25 FVW	0.28	0.93	0.47	0.28

** 16TRW with 20mm and 16mm rib spacing*

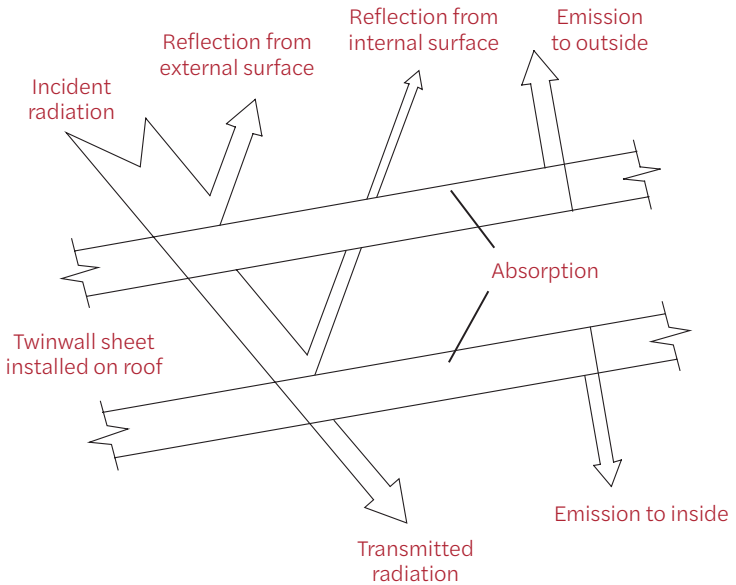
Spectral Transmission of Polycarbonate Sheeting

Polycarbonate sheet is transparent to wavelengths of light between 385nm at the lower limit and approximately 5000nm at the upper limit. Importantly polycarbonate is opaque to infra-red radiation: light in the visible spectrum entering a building is absorbed by the interior and contents and re-radiated as long wave infra-red radiation, which cannot be re-transmitted back through the polycarbonate sheeting.

Consequently in addition to being an excellent insulating material multiwall polycarbonate also retains heat inside buildings due to the greenhouse effect which it creates.



Transmission Reflection and Absorption of Light by Polycarbonate Sheeting



Cleaning

As a condition of ensuring that multiwall polycarbonate performs at optimum throughout its service life, it is recommended that the sheet be cleaned periodically using suitable household cleaning agents. The recommended cleaning instructions are as follows:

- Use lukewarm water to rinse sheet and soften dirt.
- Make up a solution of lukewarm water and ordinary household cleaner or a mild soap and use this to wash sheet.
- A sponge or soft cloth should then be used to gently remove dirt and grime.
- The cleaning process should then be repeated and the sheet rinsed and dried with a soft cloth.

Fire Performance

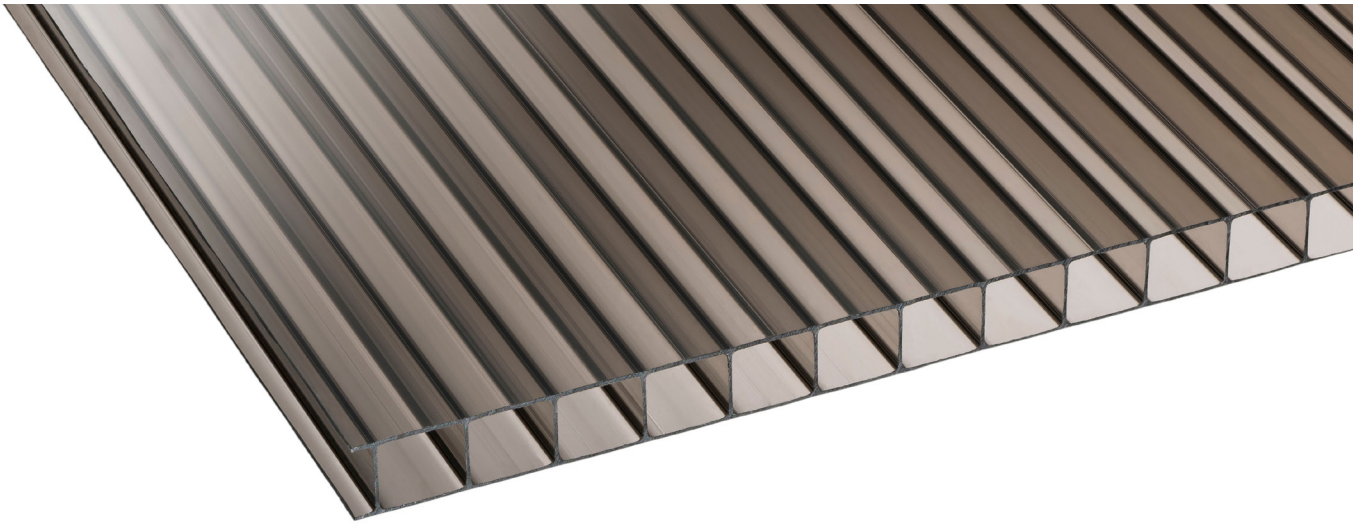
Multiwall polycarbonate sheets exhibit excellent fire performance and in the event of a fire will soften and open, allowing smoke, heat and gases produced by the fire to escape. This 'venting' property means that damage within buildings can be limited. For details of fire ratings please contact our Technical Department.

Warning!

Care should be taken to observe the following precautions:

- Do not scrub multiwall polycarbonate sheet with brushes or sharp instruments.
- Avoid contact with the UV protected surface of multiwall polycarbonate by Butyl Cellosolve, Isopropanol or any other solvent.
- Avoid any abrasives or cleaners of a highly alkaline composition.

It is generally advisable in all instances to test any cleaner on a sample piece of multiwall polycarbonate first and it should also be remembered that cleaners and solvents which state that they are suitable for cleaning polycarbonate may not be safe for use on the UV protective surface of multiwall polycarbonate.



Installation Accessories

A full range of fully compatible installation accessories are available for the complete roofing solutions.

It is important when installing any multiwall polycarbonate sheet that accessories are compatible for use with polycarbonate.

Aluminum Base and Cap Connecting Profile

Polycarbonate U End Profiles

Polycarbonate H Connecting Profiles

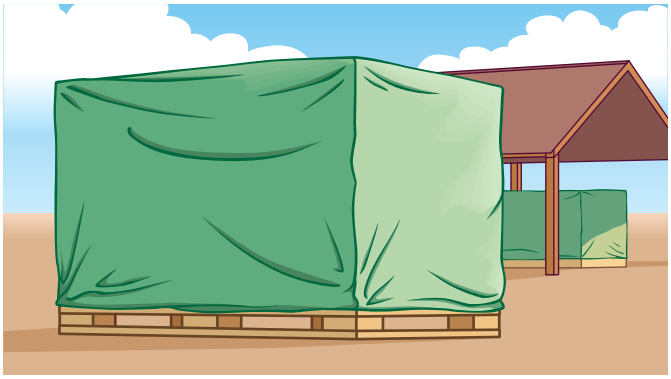
Fasteners

Vent Tape

Sealing Tape

Storage

Store sheets on a flat surface or wooden supports with a minimum 4” bearing surface, spaced no more than 3 ft apart. Cover with an opaque tarp, securely fastened to protect from wind, rain, and sunlight. Indoor storage is recommended whenever possible.



Important Installation Rules

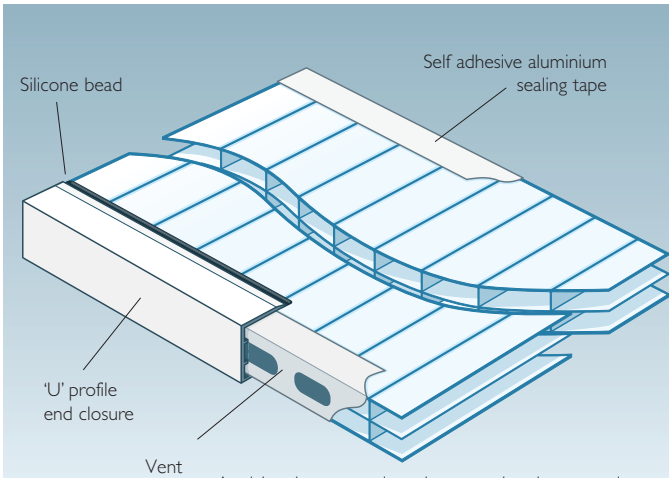
Multiwall polycarbonate is robust yet lightweight. Installation is straightforward but it is IMPERATIVE that the following RULES are applied to EVERY installation.

- Roofs should always be designed with a minimum slope of 5° to allow adequate rainwater run-off.
- Fitting of multiwall polycarbonate sheets should be the last operation in completing the project. The structure should be finished with all components of the selected glazing system in place and wood preservatives, when used, thoroughly dry.
- Multiwall polycarbonate sheets must always be installed with the ribs running vertically, or up-slope.
- Ensure that the clearly marked UV protected surface of the multiwall polycarbonate sheet is to the outside. About 2" (nominal) of protective film should be peeled back from the edges of the sheet prior to application and the residual film removed after glazing is complete.

Sealants

Always ensure that sealants, gaskets and other materials used with multiwall polycarbonate do not have a detrimental effect on the material.

MUST use 100% silicone.



Applying the appropriate closure and sealant tapes is essential to prevent ingress of moisture, dust and insects.

Tapes

The diagram above shows the correct orientation of multiwall polycarbonate sheet in application and the positioning of the tapes. A sealing tape, preferably aluminium, is applied at the top of the sheet to prevent ingress of moisture, dust and insects. Vent tape applied to the bottom end of the sheet permits air to move freely in and out of the sheet, helping minimize condensation by equalization of the air vapor pressure inside and outside the sheet.

The vent tape also prevents dust or insects entering the sheet. The vent tape must be covered with a 'U' profile, sealed to the top face of the sheet with a small silicone bead to protect both the tape and the lower end of the sheet from rainwater run-off.

Allowing air movement through the vent tape does not reduce the insulation performance. Following these procedures reduces the risk of condensation, water ingress and the growth of algae within the sheet.

Drainage of condensed water vapor is facilitated by installing the sheet with its ribs running in the direction of the slope.

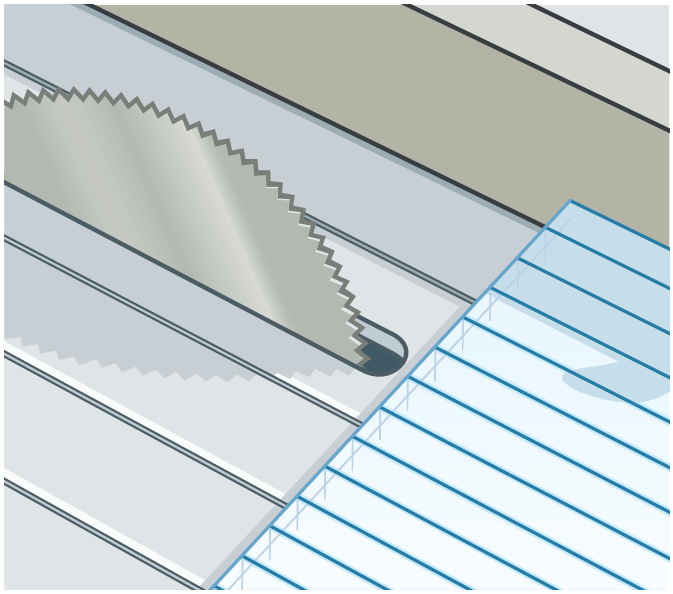
Multiwall polycarbonate sheet has been proven to be suitable for use with a substantial number of commercially available glazing compounds, building materials and profile systems. However, it is still vital that advice on chemical compatibility should be sought either from either from APC or the manufacturer of the interfacing products.

Cutting

For best results when cutting sheets, use a circular saw fitted with a diamond grit blade, or a blade with a sufficiently high tooth count.

- Vary speed rotation and feed rate proportional to sheet thickness and complexity of internal structure.
- Dust MUST be removed from the sheet using a vacuum cleaner or dry compressed air.
- Always support the sheet to avoid stress and vibration.

For further information please contact our Technical Department.



Thermal Expansion

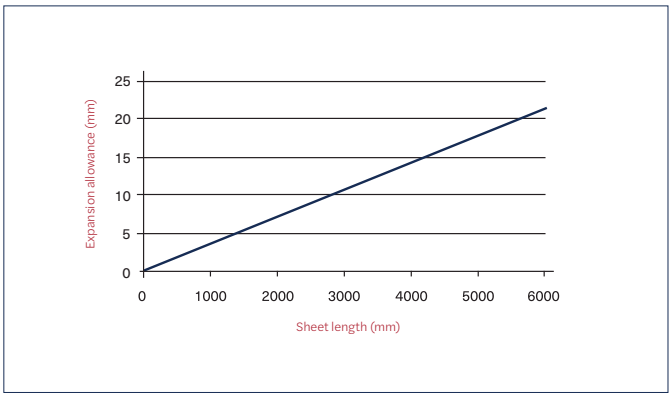
Accommodating the thermal expansion of multiwall polycarbonate sheet cannot be over emphasized as this is generally greater than that of other popular glazing materials and affects both length and width.

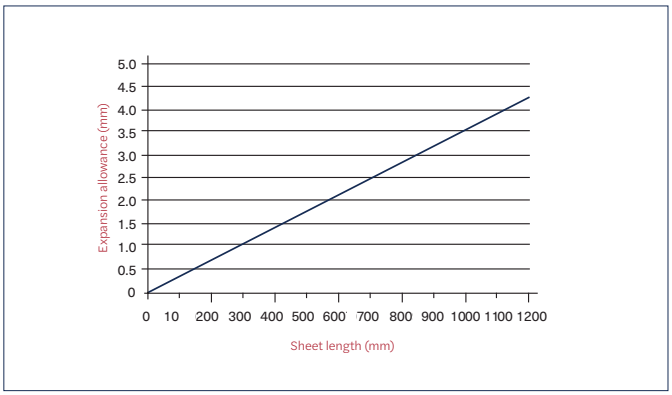
Comparison of the linear thermal expansion of multiwall polycarbonate sheet with other common materials.

	LINEAR THERMAL EXPANSION
Multiwall polycarbonate	3.72 x10^{-5} ft/ft°F
PVC	3.78 x10^{-5} ft/ft°F
Acrylic	3.89 x10^{-5} ft/ft°F
Aluminium	1.28 x10^{-5} ft/ft°F
Steel	0.67 x10^{-5} ft/ft°F
Glass	0.47 x10^{-5} ft/ft°F

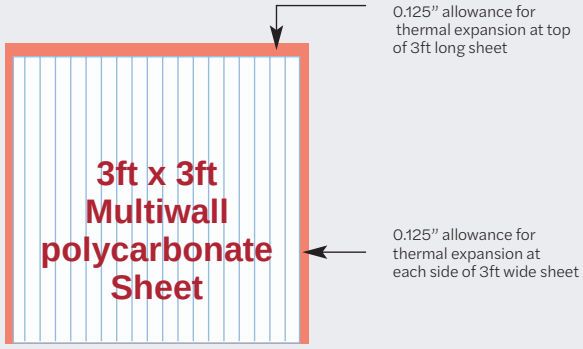
It is important when installing any multiwall polycarbonate sheet that accessories are compatible for use with polycarbonate.

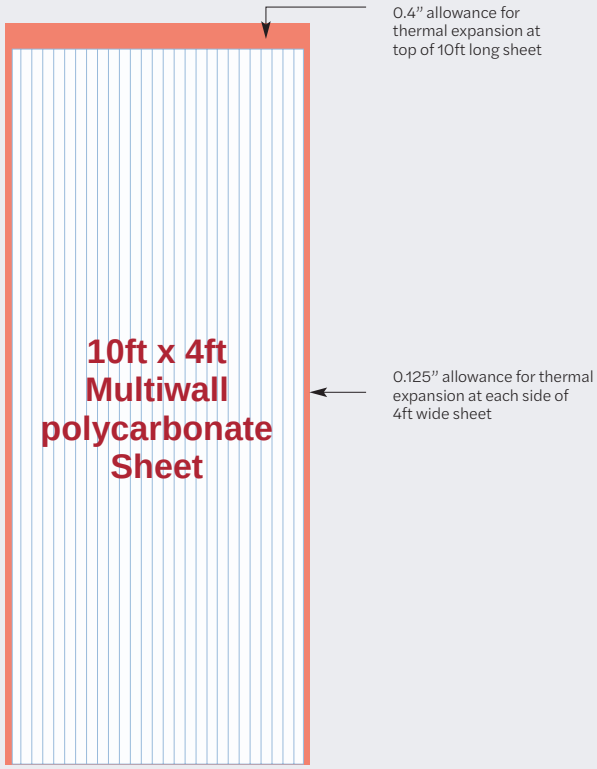
Multiwall polycarbonate sheet will expand on exposure to heat and moisture. An expansion space of 0.125"(nominal) per 3ft should be allowed for both width and length of each sheet. The graph below shows the amount of thermal expansion allowance which must be made for given widths and lengths of sheet.





Example:
If the sheet length is 3ft allow 0.125" (nominal) for thermal expansion at the top. For sheets that are 18ft long allow 0.75" (nominal) at the top.

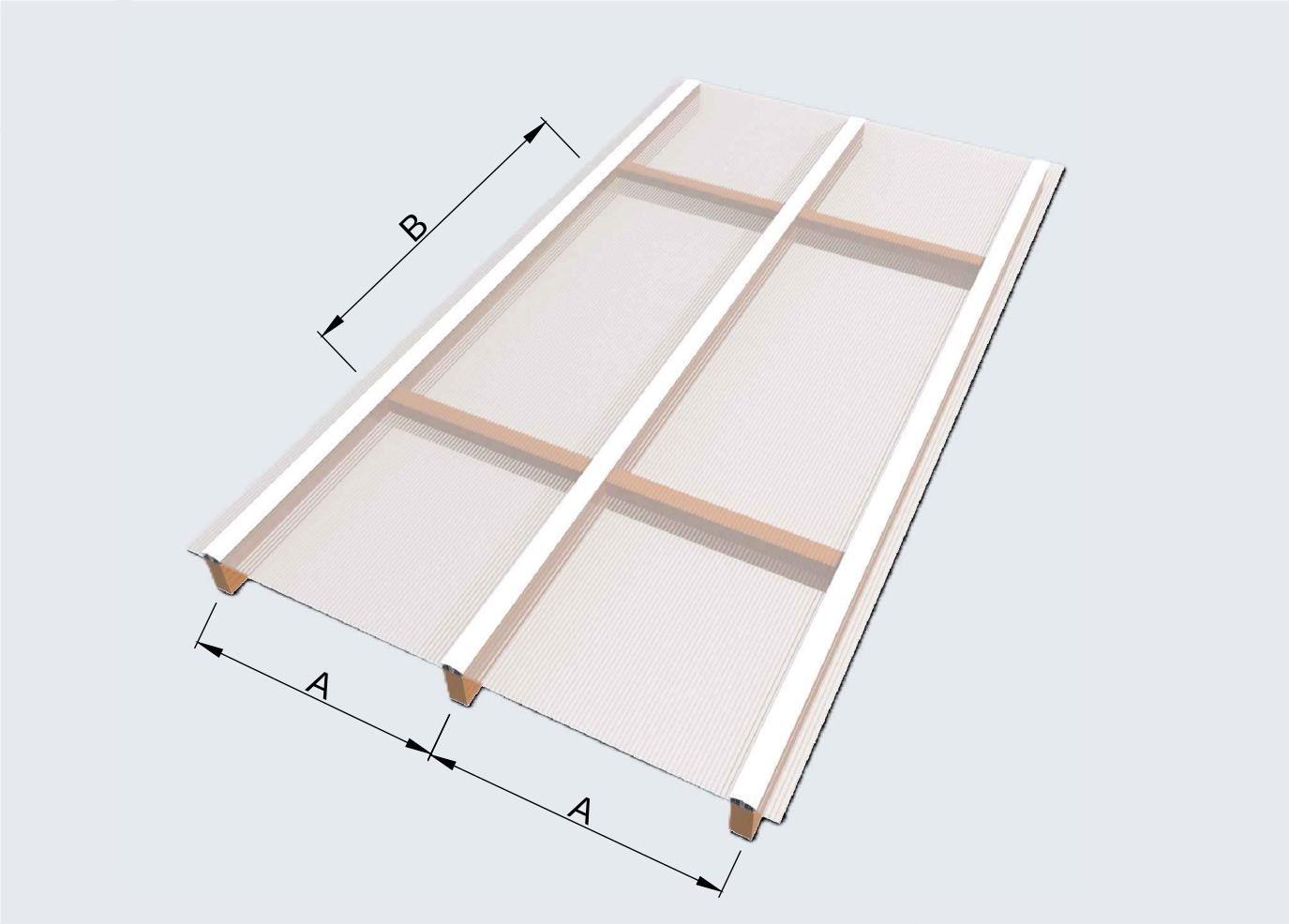




Loading & Spanning

The diagram below represents the information in the spanning tables and graphs on pages 18 – 21.

This information is based on controlled testing and engineering assumptions. Actual performance may vary with installation, framing, fastening, and environmental conditions. Always verify compliance with local building codes and project-specific requirements.



Example 1: Product - 6mm 2 Wall

Sheet width (A) is 24'' the applied positive load is 20 psf, therefore the maximum span (B) for this loading scenario is 102".

Example 2: Product - 16mm 3 Wall

Sheet width (A) is 36'' the applied positive load is 20 psf, therefore the maximum span (B) for this loading scenario is 110".

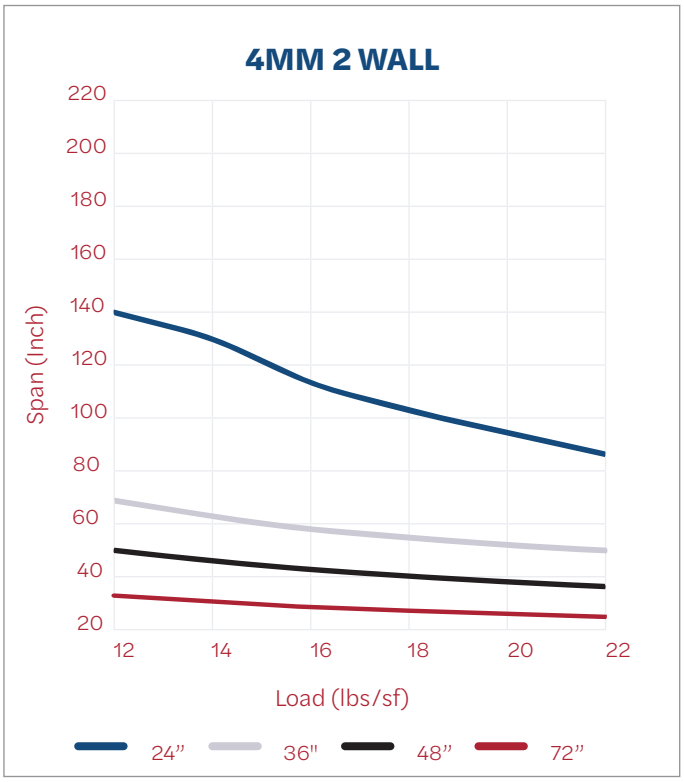
Load and Span Guidelines

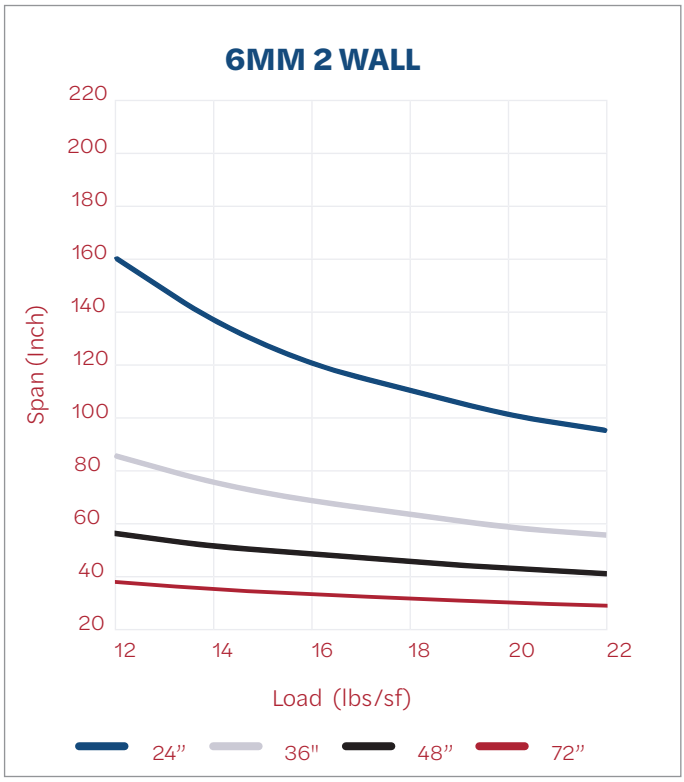
4MM 2 WALL						
LOAD (LBS/SF)	12	14	16	18	20	22
SHEET WIDTH [A] (INCHES)	Span Length [B] (inches)					
24"	142	131	114	103	94	86
36"	70	64	59	55	52	50
48"	50	46	43	40	38	36
72"	34	31	29	28	26	25

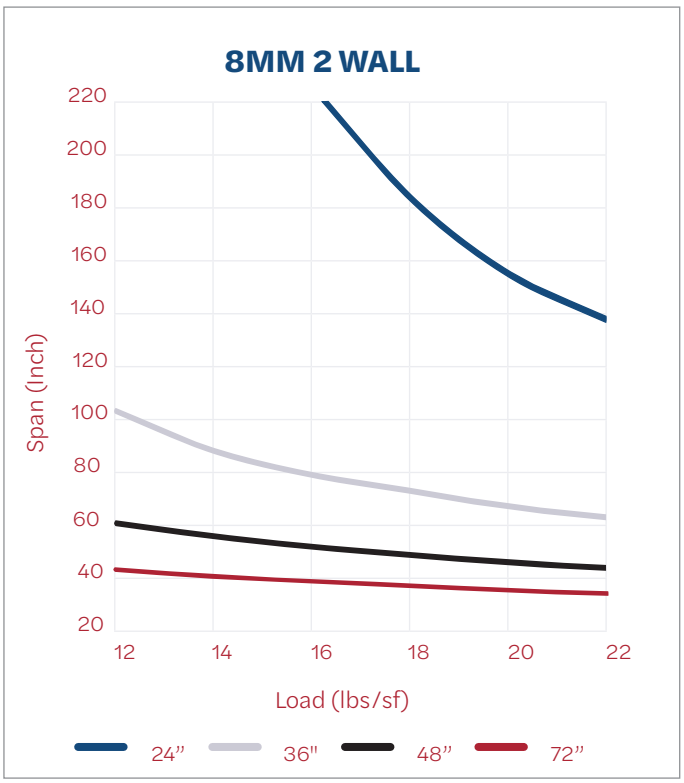
6MM 2 WALL						
LOAD (LBS/SF)	12	14	16	18	20	22
SHEET WIDTH [A] (INCHES)	Span Length [B] (inches)					
24"	160	137	121	111	102	96
36"	86	76	69	64	59	56
48"	56	51	48	45	42	40
72"	38	35	33	32	30	29

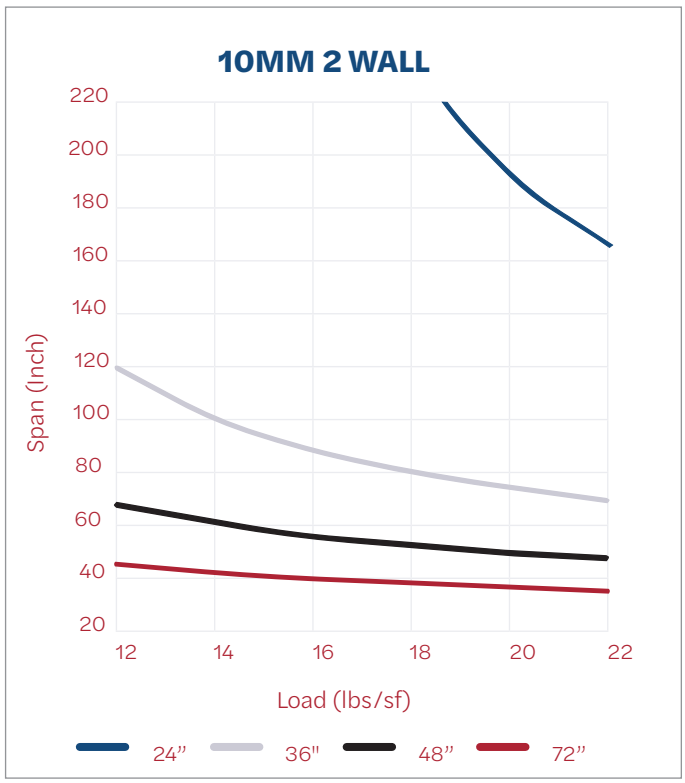
8MM 2 WALL						
LOAD (LBS/SF)	12	14	16	18	20	22
SHEET WIDTH [A] (INCHES)	Span Length [B] (inches)					
24"	-	-	224	183	155	138
36"	103	88	79	73	67	63
48"	61	56	52	49	46	44
72"	42	39	37	36	34	33

10MM 2 WALL						
LOAD (LBS/SF)	12	14	16	18	20	22
SHEET WIDTH [A] (INCHES)	Span Length [B] (inches)					
24"	-	-	357	246	194	166
36"	119	100	88	80	74	69
48"	67	61	56	53	50	48
72"	46	43	41	39	37	36


4MM 2 WALL
220
200
180
160
140
120
100
80
60
40
20
Span (Inch)
12
14
16
18
20
22
Load (lbs/sf)
24”
36"
48”
72”


6MM 2 WALL
220
200
180
160
140
120
100
80
60
40
20
Span (Inch)
12
14
16
18
20
22
Load (lbs/sf)
24”
36"
48”
72”


8MM 2 WALL
220
200
180
160
140
120
100
80
60
40
20
Span (Inch)
12
14
16
18
20
22
Load (lbs/sf)
24”
36"
48”
72”

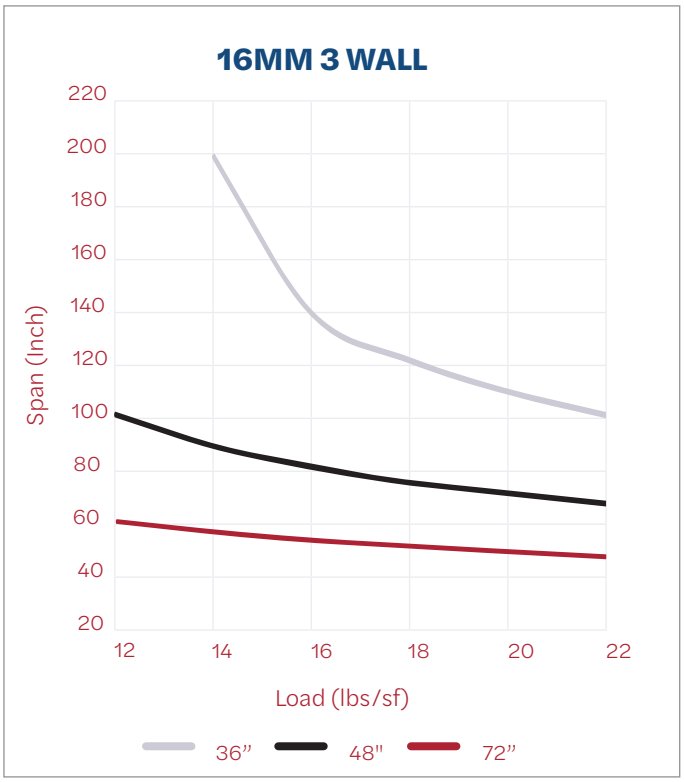

10MM 2 WALL
220
200
180
160
140
120
100
80
60
40
20
Span (Inch)
12
14
16
18
20
22
Load (lbs/sf)
24”
36"
48”
72”

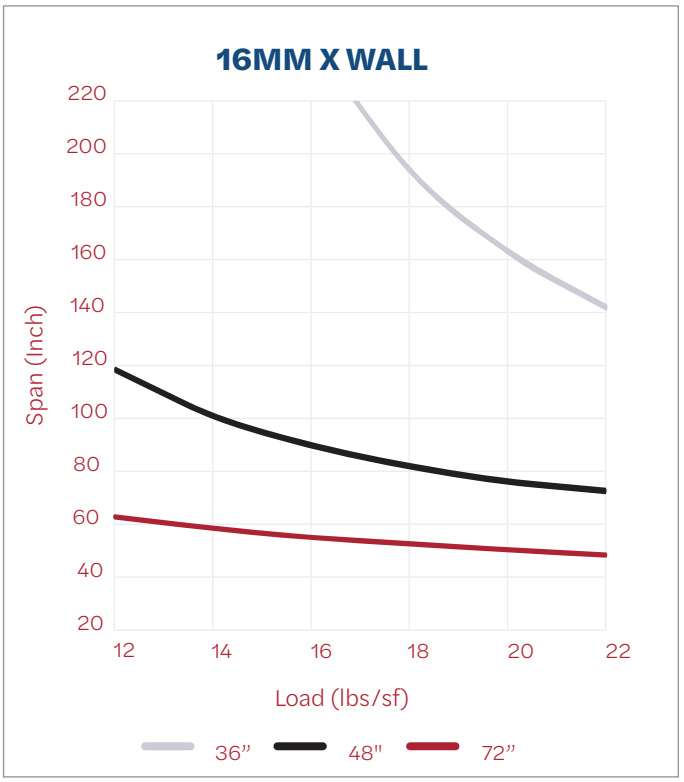
16MM 3 WALL						
LOAD (LBS/SF)	12	14	16	18	20	22
SHEET WIDTH [A] (INCHES)	Span Length [B] (inches)					
24"	-	-	-	-	-	-
36"	-	200	140	122	110	101
48"	101	89	81	75	71	67
72"	61	57	54	51	49	47

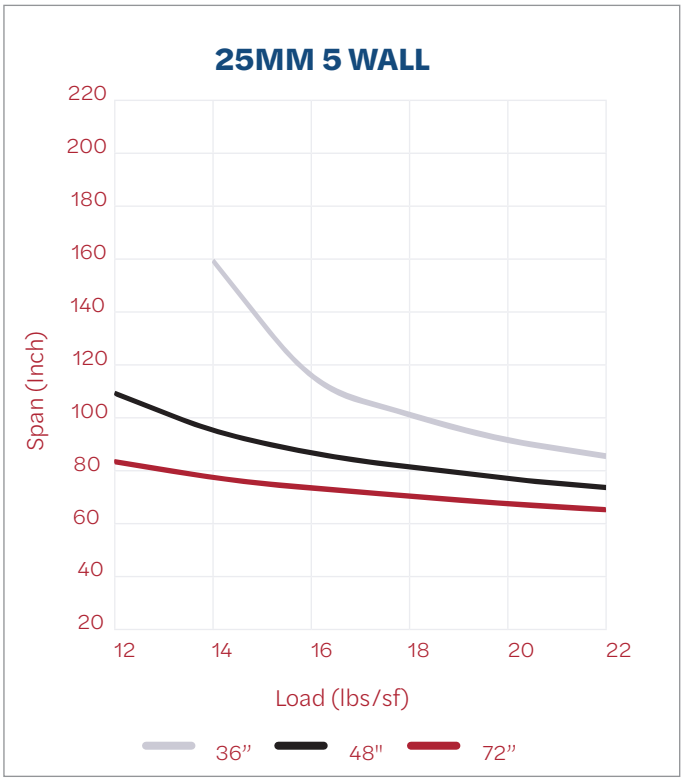
16MM X WALL						
LOAD (LBS/SF)	12	14	16	18	20	22
SHEET WIDTH [A] (INCHES)	Span Length [B] (inches)					
24"	-	-	-	-	-	-
36"	-	-	241	193	163	142
48"	118	101	90	82	76	72
72"	63	59	55	53	50	48

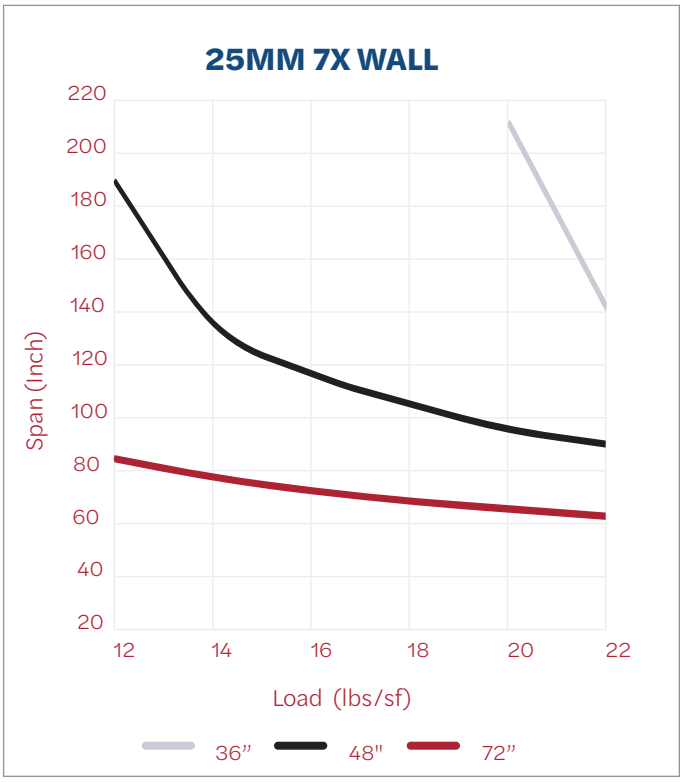
25 MM 5 WALL						
LOAD (LBS/SF)	12	14	16	18	20	22
SHEET WIDTH [A] (INCHES)	Span Length [B] (inches)					
36"		160	116	101	91	85
48"	111	96	87	81	77	73
72"	83	77	73	70	67	64

25 MM 7X WALL						
LOAD (LBS/SF)	12	14	16	18	20	22
SHEET WIDTH [A] (INCHES)	Span Length [B] (inches)					
36"	-	-	-	-	209	145
48"	191	135	115	103	93	87
72"	85	78	73	69	66	63


16MM 3 WALL
220
200
180
160
140
120
100
80
60
40
20
Span (Inch)
12
14
16
18
20
22
Load (lbs/sf)
36”
48"
72”


16MM X WALL
220
200
180
160
140
120
100
80
60
40
20
Span (Inch)
12
14
16
18
20
22
Load (lbs/sf)
36”
48"
72”


25MM 5 WALL
220
200
180
160
140
120
100
80
60
40
20
Span (Inch)
12
14
16
18
20
22
Load (lbs/sf)
36”
48"
72”


25MM 7X WALL
220
200
180
160
140
120
100
80
60
40
20
Span (Inch)
12
14
16
18
20
22
Load (lbs/sf)
36”
48"
72”

Securing Sheet

Sheets must not be fastened too tightly as this will prevent thermal expansion and contraction and will adversely affect the installation.

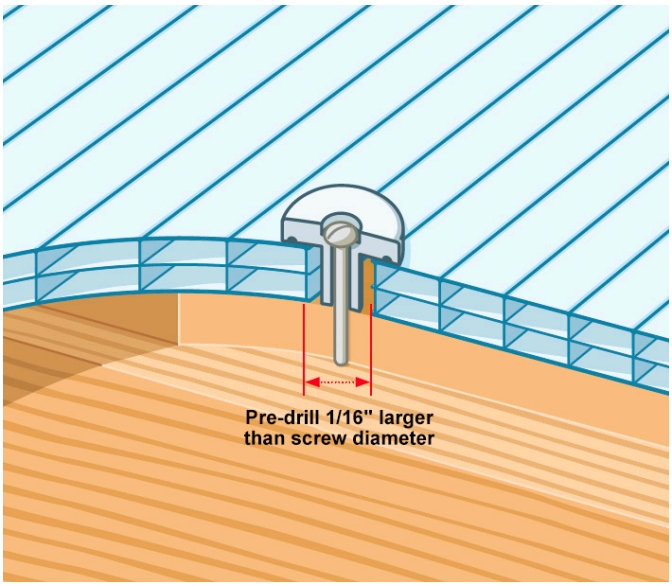
At the eaves purlin additional fastening is necessary to prevent wind uplift and downslope slippage due to repeated thermal movement. One screw per sheet width, centrally located between glazing bars should be sufficient. ***Always pre-drill holes 1/16" larger than the screws diameter to allow the sheet to move.***

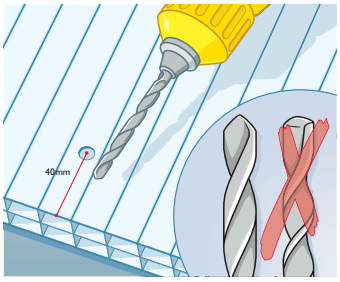
The maximum overhang of the end of the sheet should be 2 - 2.5". This will ensure proper run off of rainwater into the gutter

Drill between ribs. ***When drilling multiwall polycarbonate use standard twist drills and carbide tipped drills.***

The sheet must be supported firmly underneath when drilling. Holes must not be drilled any less than 1.5" (nominal) from the edges of the sheet.

A successful polycarbonate installation must satisfy load conditions, remain weathertight at all times and have one fixed point from which there can be unrestricted thermal movement in length and width.





Film Removal

Multiwall polycarbonate sheet is covered with a protective film indicating which side of the sheet is UV protected. This should always be on the outside of the installation.

A further plain film is applied to the inner surface. To install, the films should be peeled back about 2" (nominal) to allow clean sheet insertion into the glazing system and application of end tapes and closure.

Both films should be left in place for protection of the sheet until project hand over, particularly when there are following trades and then they can be removed. If the project is likely to take time to complete, regularly check that the film does not bond on to the sheet.

Safety

Roof Access - Do not walk on multiwall polycarbonate sheets at any time. Always use a crawling board placed across several support purlins of the structure.

Handling - Sheets up to 10ft long x 3ft wide can be safely handled by one person but larger sheets will require two or more people. When handling and fitting sheets, particular care must be taken in windy conditions.

Any pallets of 20ft or longer must be lifted using a spreader beam of adequate length (with no more than 8ft unsupported at each end) or have the sheets removed by hand (one or two at a time) and re-stacked on a suitable pallet.

Chemical Resistance

Good - little or no reduction in physical properties.

Fair - some reduction in physical properties after long exposure.

Poor - significant change in physical properties after short exposure.

N.D. - not determined.

Note: Values are only indications and should not be interpreted as absolute proof of resistance of any part against a certain substance. Testing under actual exposure conditions will provide a better indication of performance.

ACIDS	CONCENTRATION	ROOM TEMPERATURE 73°F (23°C)	ELEVATED TEMPERATURE 163°F (73°C)
Acetic (CH_3COOH)	Up to 50% 70%	Good Poor	Poor Poor
Benzoic ($C_6H5COOH$)	10%	Fair/Poor	Poor
Borium (H_3BO_3)	N.D.	Good	N.D.
Chromic (CrO^3)	20% 50%	Good Fair	N.D.
Citric $(HOOC)_3(CH2)_2COH$	10%	Good	N.D.
Formic (HCOOH)	40% 70% 97%	Good Fair Poor	Poor Poor Poor
Hydrochloric (HCl)	10% 20% 30%	Good Fair Poor	N.D. N.D. N.D.
Hydrogen flouride (HF)	Conc.	Good/Fair	N.D.
Lactic ($CH_3CHOHCOOH$)	85%	Good	Fair/Poor
Nitric (HNO_3)	10% 50% 70%	Good Fair/Poor Poor	Good Poor Poor
Oleic	-	Good	N.D.
Orthophosphoric (H_3PO_4)	10% 100%	Good Good	Fair Good
Oxalic ($HOOCCOOH.2H_2O$)	10% 30%	Good Poor	N.D. Poor
Picric	2%	Fair	N.D.
Phosphoric	85%	Good	Good
Sulphuric (H_2SO_4)	70% 90%	Good Fair	Good

Chemical Resistance

ALCOHOLS	CONCENTRATION	ROOM TEMPERATURE 73°F (23°C)	ELEVATED TEMPERATURE 163°F (73°C)
Allyl alcohol (CH_2=$CHCH_2OH$)	–	Fair	N.D.
Amyl alcohol ($CH_3(CH_2)_3CH_2OH$)	–	Good	Fair
Benzyl alcohol ($C_6H_5CH_2OH$)	–	Poor	N.D.
Butyl alcohol ($CH_3(CH_2)_3OH$)	–	Good	Good
Iso-octyl alcohol	–	Fair	N.D.
Isopropyl alcohol ($CH_3CHOHCH_3$)	–	Fair	Fair
Phenyl-ethyl alcohol	–	Poor	N.D.
Propargyl alcohol	–	Good	N.D.
Dowanol PM	–	Poor	N.D.
Ethanol (C_6H_5OH)	90% 100%	Good Poor	Good Poor
2-amino-ethanol ($H_2NC_2H_4OH$)	–	N.D.	Poor
Methanol (CH_3OH)	–	Poor	Poor
Cyclohexanol ($C_6H_{11}OH$)	–	Fair	Fair
Glycerine ($HOCH_2HOCHCH_2OH$)	–	Fair	N.D.
(di) Ethylene glycol $O(CH_2CH_2OH)_2$	–	Good	Good
Butylene glycol	–	Good	N.D.

ALKALIS	CONCENTRATION	ROOM TEMPERATURE 73°F (23°C)	ELEVATED TEMPERATURE 163°F (73°C)
Ammonium hydroxide (NH_4OH)	5% 30%	Fair (crazing) Poor	N.D. Poor
Potassium hydroxide (KOH)	1% Conc.	Fair (crazing) Poor	N.D. Poor
Sodium carbonate (Na_2CO_3)	15%	Good	Fair
Sodium hydroxide (NaOH)	1% conc.	Fair (crazing) Poor	N.D. Poor

SALTS	CONCENTRATION	ROOM TEMPERATURE 73°F (23°C)	ELEVATED TEMPERATURE 163°F (73°C)
Ammonium fluoride (NH_4F)	Sat.	Poor	Poor
Ammonium chloride (NH_4Cl)	10%	Good	N.D.
Ammonium sulphate ($(NH_4)_2SO_4$)	10%	Good	Good
Ammonium sulphite ($(NH_4)_2SO_3$)	10%	Poor	N.D.
Ammonium nitrate (NH_4NO_3)	10%	N.D.	Good
Aluminium chloride ($AlCl_3$)	Sat.	Good	Poor
Aluminium oxalate	-	Good	N.D.
Aluminium sulphate ($Al_2(SO_4)_3$)	10%	Good	Good
Barium chloride ($BaCl_3$)	10%	Good	Good
Barium bromide ($BaBr_2$)	10%	N.D.	Fair
Calcium chloride ($CaCl_2$)	10%	Good	Good
Calcium nitrate ($Ca(NO_3)_2$)	10%	Good	Good
Calcium hypochlorite ($Ca(Ocl)_2$)	-	Good	N.D.
Copper chloride ($CuCl_2$)	Sat.	Good	Good
Copper sulphate ($CuSO_4$)	Sat.	Good	N.D.
Iron chloride ($FeCl^3$)	Sat.	Good	Good
Iron sulphate ($FeSO_4$)	10%	Good	N.D.
Magnesium chloride ($MgCl_2$)	10%	Good	Good
Magnesium sulphate ($MgSO_4$)	Sat.	Good	N.D.
Nickel/Zinc sulphate (NiSO4/ZnSO4)	Sat.	Good	N.D.
Potassium bromide (KBr)	Sat.	Good	N.D.
Potassium carbonate ($K2CO_3$)	Sat.	Good	N.D.
Potassium cynite (KCN)	-	Poor	N.D.
Potassium chloride (KCl)	Sat.	Good	N.D.
Potassium chromate (K_2CrO_4)	Sat.	Good	N.D.
Potassium manganate ($KMnO_4$)	10%	Good	Good
Potassium nitrate (KNO_3)	Sat.	Good	N.D.
Potassium sulphate (K_2SO_4)	Sat.	Good	N.D.
Sodium chloride (NaCl)	10%	Good	Good
Sodium chlorate ($NaClO_3$)	10%	Good	N.D.
Sodium chromate ($Na_2Cr_2O_7$)	10%	Good	Good
Sodium carbonate (Na_2CO_3)	10%	Good	N.D.
Sodium nitrate ($NaNO_3$)	10%	Poor	N.D.
Sodium sulphide (Na_2S)	10%	Good	Good
Sodium sulphate (Na_2SO_4)	10%	Good	Good

Chemical Resistance

FOOD STUFFS	CONCENTRATION	ROOM TEMPERATURE 73°F (23°C)	ELEVATED TEMPERATURE 163°F (73°C)
Fruit & vegetable juice	Normal use	Good	Good
Beer, cognac, whisky, gin, vodka, wine, rum	Normal use	Good	N.D.
Milk, coffee, chocolate	Normal use	Good	Good
Black tea	Normal use	N.D.	Fair/Poor
Mineral water	Normal use	Good	Good
Butter, margarine, sauces & vinegar	Normal use	Good	Good/Fair
Cooking oils	Normal use	Good	Good
Vegetables	Normal use	Good	Good
All spices except: Nutmeg Clove oil	Normal use	Good Poor Poor	Good N.D. N.D.
Salt, sugar	Normal use	Good	N.D.
Tobacco	Normal use	Good	Good
Ketchup, tomato puree	Normal use	Good	N.D.
Fish, meat	Normal use	Good	Good

OILS	CONCENTRATION	ROOM TEMPERATURE 73°F (23°C)	ELEVATED TEMPERATURE 163°F (73°C)
Mobil 10 W 40	Normal use	Good	N.D.
Skydrol 500 A	Normal use	Poor	N.D.
Jet fuel JP-4	Normal use	Fair	N.D.
Drill Oil	Normal use	Poor	N.D.
Brake Fluid (ATE)	-	-	N.D.
Diesel oil	Normal use	Fair	N.D.
Terpene oil	-	Fair	N.D.
Gasoline Super	-	Poor	N.D.
Test Gasoline	-	Poor	N.D.
Refined oil	-	Good	N.D.
Gasoline normal	-	Poor	N.D.
Soy bean oil, peanut oil, castor oil	Normal use	Fair/Good	N.D.
Spindle oil, dynamo oil, turbine oil, machine oil	Normal use	Fair	N.D.
Refrigerator oil	-	Good	N.D.
Cylinder oil	-	Good	N.D.
Cable insulation oil	-	Good	N.D.
Other lubricant oils	-	Good	N.D.
Silicon oil	Normal use	Good	Poor
Whale grease, soap grease, lubrication greases	Normal use	Good	N.D.
Molikote paste or powder	Normal use	Good	N.D.
Camhor oil	Normal use	Good	Fair
Vaseline	Normal use	Good	N.D.
Fish oil	Normal use	Good	N.D.

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